1. A suspension damper comprising:

a cylinder defining a cavity being substantially filled with a fluid;

a piston slidably positioned in the cylinder separating the cavity into a compression chamber and an extension chamber;

a rod coupled to the piston and extending through one of the chambers and exiting the cavity;

a tapered interface between the rod and the piston to thereby align the rod relative to the piston;

a passage through which the fluid moves between the extension chamber and the compression chamber during sliding of the piston in the cylinder; and

an air pressure actuated control valve assembly responsive to an air pressure input for adjustment to and between a plurality of positions to control the movement of fluid in the passage between the extension and compression chambers;

wherein a damping force of the suspension damper is a function of the air pressure input;

wherein the tapered interface provides a fluid tight seal.

2. The suspension damper of claim 1 wherein the tapered interface further comprises:

a shoulder on a portion of the rod; and

a confronting surface on a portion of the piston proximate the shoulder.

3. A suspension damper comprising:

a cylinder defining a cavity being substantially filled with a fluid;

a piston slidably positioned in the cylinder separating the cavity into a compression chamber and an extension chamber;

a rod coupled to the piston and extending through one of the chambers and exiting the cavity;

a resistance welded interface between the rod and the piston;

a passage through which the fluid moves between the extension chamber and the compression chamber during sliding of the piston in the cylinder; and

an air pressure actuated control valve assembly responsive to an air pressure input for adjustment to and between a plurality of positions to control the movement of fluid in the passage between the extension and compression chambers;

wherein a damping force of the suspension damper is a function of the air pressure input;

wherein the resistance welded interface provides a fluid tight seal.

4. The suspension damper of claim 3 wherein the resistance well interface is tapered.

5. A suspension damper comprising:

a cylinder defining a cavity being substantially filled with a fluid;

a piston slidably positioned in the cylinder separating the cavity into a compression chamber and an extension chamber;

a rod coupled to the piston and extending through one of the chambers and exiting the cavity;

a threaded interface between the rod and the piston;

a snap ring proximate the threaded interface to align the rod relative the piston;

a passage through which the fluid moves between the extension chamber and the compression chamber during sliding of the piston in the cylinder;

an air pressure actuated control valve assembly responsive to an air pressure input for adjustment to and between a plurality of positions to control the movement of fluid in the passage between the extension and compression chambers;

wherein a damping force of the suspension damper is a function of the air pressure input; and

a sealant at the threaded interface to provide a fluid tight seal between the rod and the piston.

6. A suspension system for a vehicle comprising:

a pneumatic suspension sub-system selected from at least one of the following: a vehicle air-suspension system and a vehicle air-leveling system, the pneumatic suspension sub-system generating an air pressure value as a function of a weight of the vehicle and a condition of the road on which the vehicle travels;

at least one damper comprising:

(a) a cylinder defining a cavity being substantially filled with a fluid;

(b) a piston slidably positioned in the cylinder separating the cavity into a compression chamber and an extension chamber;

(c) a rod coupled to the piston and extending through one of the chambers and exiting the cavity;

(d) an interface between the rod and the piston to thereby provide a fluid tight seal;

(e) a passage through which the fluid moves between the extension chamber and the compression chamber during sliding of the piston in the cylinder; and

(f) an air pressure actuated control valve assembly responsive to an air pressure input for adjustment to and between a plurality of positions to control the movement of fluid in the passage between the extension and compression chambers;

wherein a damping force of the suspension damper is a function of the air pressure input.

7. The suspension system of claim 6 wherein the interface between the rod and the piston further comprises:

a tapered interface region between the rod and the piston to thereby align the rod relative to the piston and provide the fluid tight seal.

8. The suspension system of claim 7 wherein the tapered interface region further comprises:

a shoulder on a portion of the rod; and

a confronting surface on a portion of the piston proximate the shoulder.

9. The suspension system of claim 6 wherein the interface between the rod and the piston further comprises:

a resistance weld between the rod and the piston.

10. The suspension system of claim 6 wherein the interface between the rod and the piston further comprises:

a threaded coupling between the rod and the piston;

a snap ring proximate the threaded coupling to align the rod relative the piston; and

a sealant at the threaded coupling to provide the fluid tight seal between the rod and the piston.

11. A suspension damper comprising:

a cylinder defining a cavity being substantially filled with a fluid;

a piston assembly slidably positioned in the cylinder separating the cavity into a compression chamber and an extension chamber;

a rod coupled to the piston assembly and extending through one of the chambers and exiting the cavity;

a passage through which the fluid moves between the extension chamber and the compression chamber during sliding of the piston assembly in the cylinder;

an air pressure actuated control valve assembly responsive to an air pressure input for adjustment to and between a plurality of positions to control the movement of fluid in the passage between the extension and compression chambers;

wherein a damping force of the suspension damper is a function of the air pressure input; and

a uni-directional seal plate mounted in the piston assembly and in communication with the air pressure actuated control valve assembly;

wherein the uni-directional seal plate is adapted for mounting in the piston assembly in a predetermined orientation.

12. The damper of claim 11 wherein the uni-directional seal plate further comprises:

a step extending around a perimeter thereof.

13. The damper of claim 12 wherein the piston assembly further comprises:

a piston adapter having an annular lip crimped onto the step of the uni-directional seal plate.

14. A suspension damper comprising:

a cylinder defining a cavity being substantially filled with a fluid;

a piston assembly slidably positioned in the cylinder separating the cavity into a compression chamber and an extension chamber;

a rod coupled to the piston assembly and extending through one of the chambers and exiting the cavity;

a passage through which the fluid moves between the extension chamber and the compression chamber during sliding of the piston assembly in the cylinder;

an air pressure actuated control valve assembly responsive to an air pressure input for adjustment to and between a plurality of positions to control the movement of fluid in the passage between the extension and compression chambers;

wherein a damping force of the suspension damper is a function of the air pressure;

a piston adapter having an annular lip crimped onto a portion of the air pressure actuated control valve assembly.

15. A suspension damper comprising:

a cylinder defining a cavity being substantially filled with a fluid;

a piston assembly slidably positioned in the cylinder separating the cavity into a compression chamber and an extension chamber;

a rod coupled to the piston assembly and extending through one of the chambers and exiting the cavity;

a passage through which the fluid moves between the extension chamber and the compression chamber during sliding of the piston assembly in the cylinder;

an air pressure actuated control valve assembly responsive to an air pressure input for adjustment to and between a plurality of positions to control the movement of fluid in the passage between the extension and compression chambers;

wherein a damping force of the suspension damper is a function of the air pressure;

a biasing member urging the air pressure actuated control valve assembly toward a closed position;

a retainer coupled to the biasing member to thereby secure the retainer relative to the biasing member.

16. The suspension damper of claim 15 wherein the biasing member is a spring.

17. The suspension damper of claim 15 wherein a portion of the suspension damper is deformed during assembly thereof to capture the retainer.

add a2

Add c1